

FIG. 1

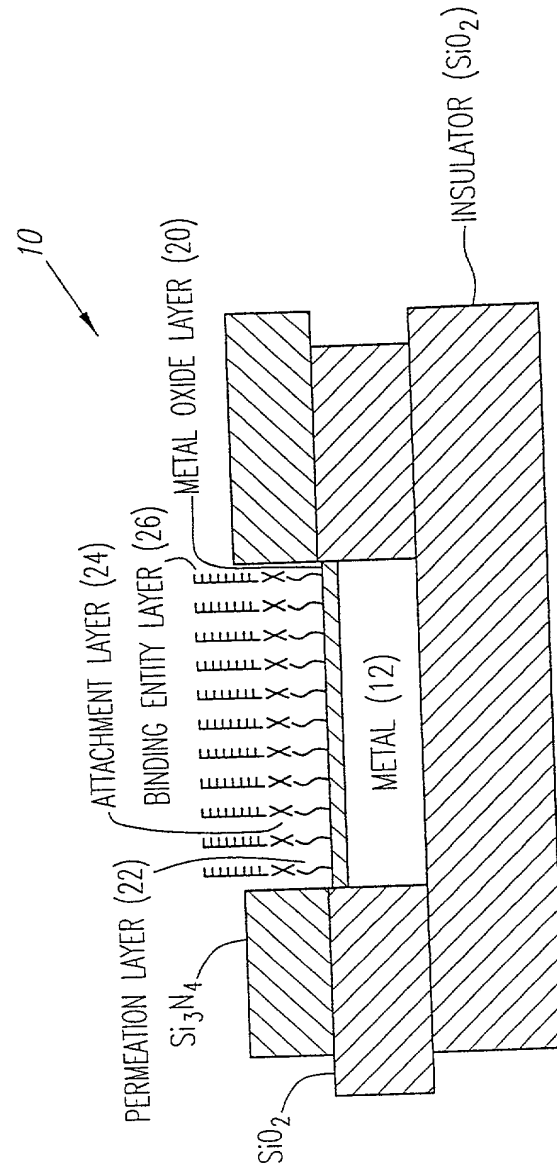


FIG. 2

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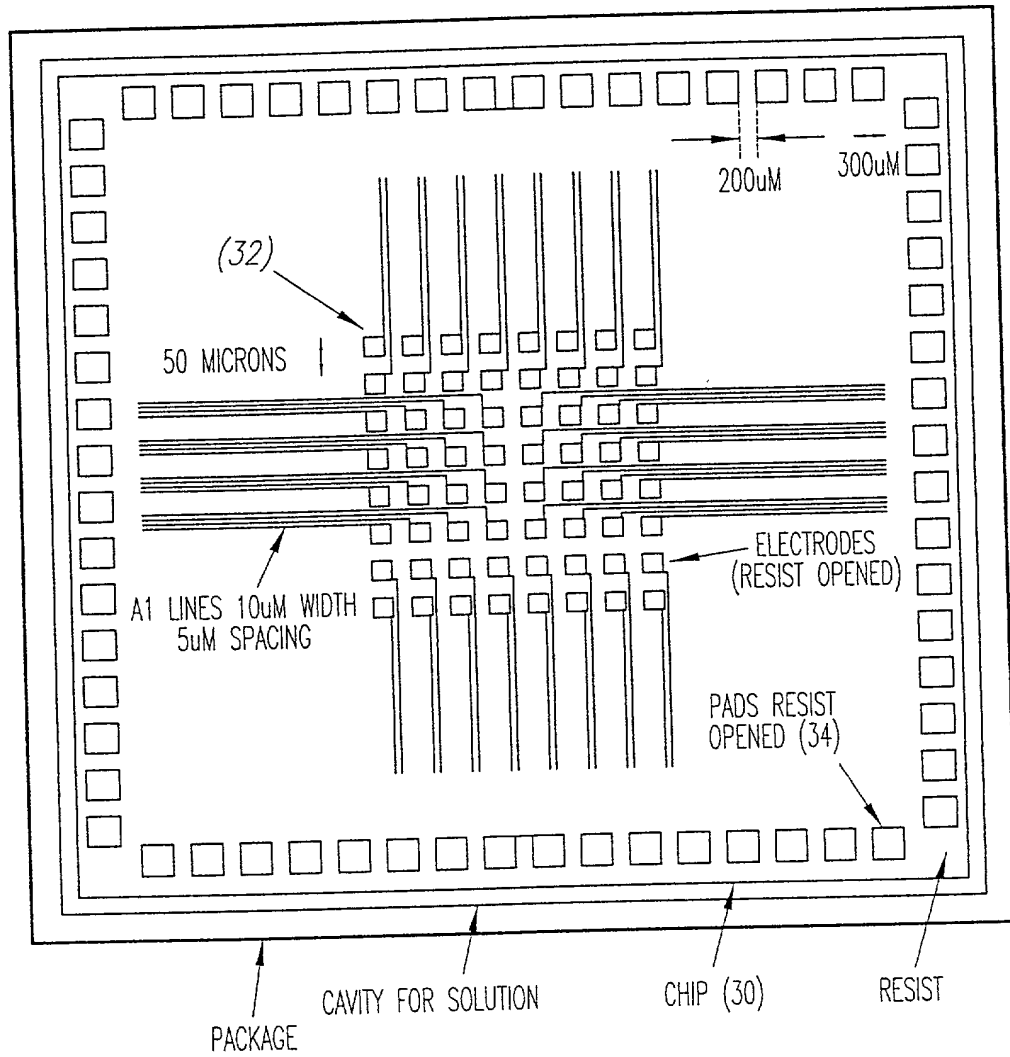
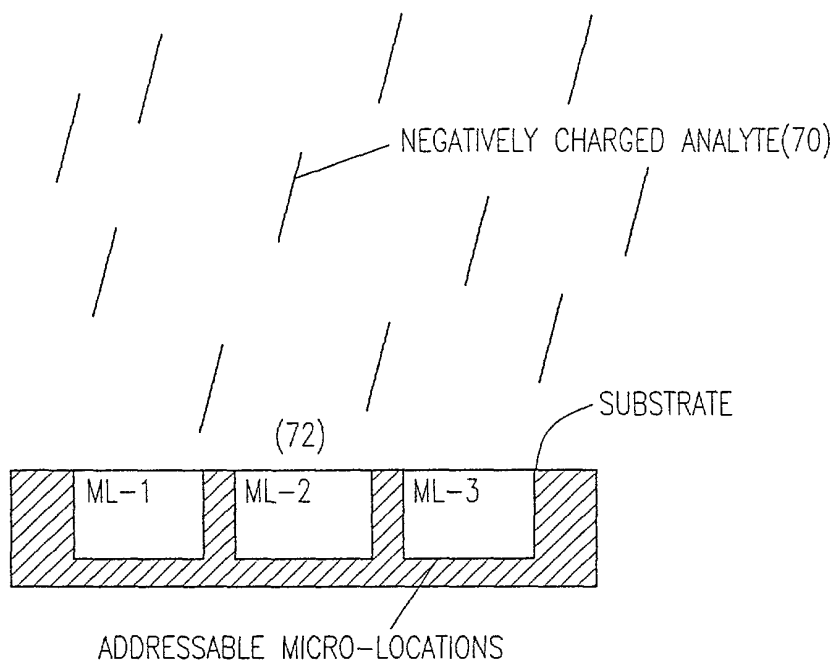
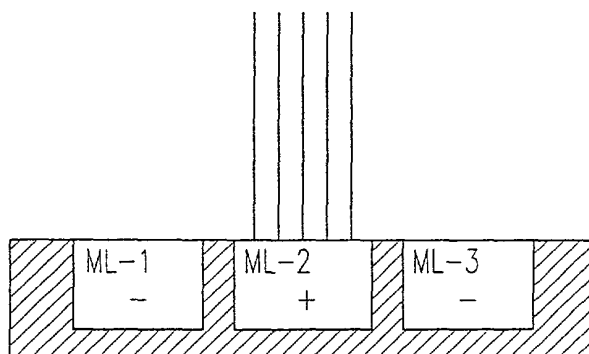


FIG. 3

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*FIG. 4A*



*FIG. 4B*

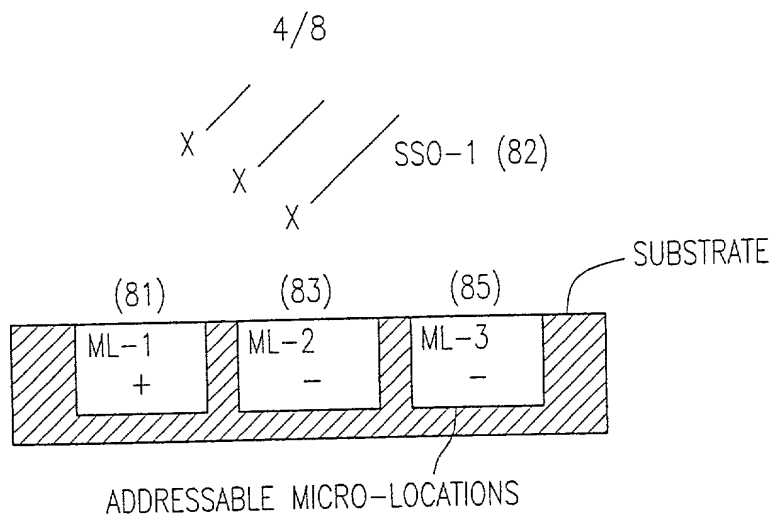


FIG. 5A

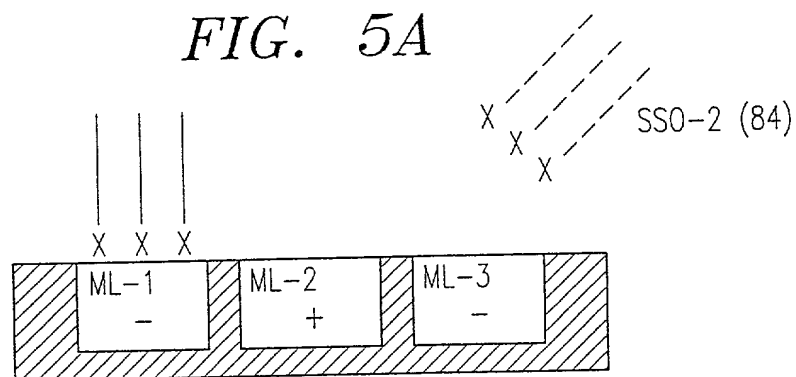


FIG. 5B

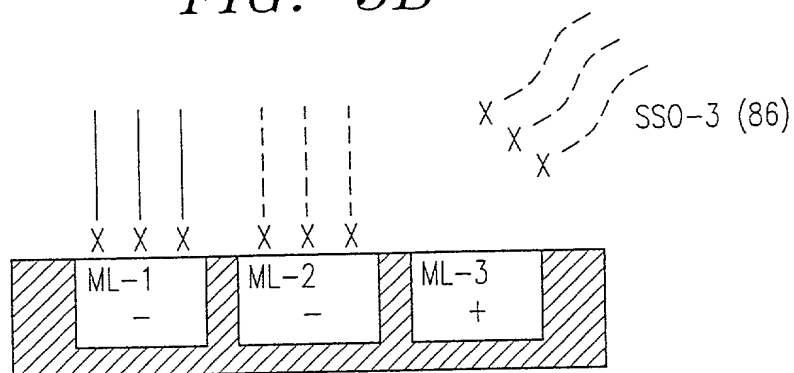


FIG. 5C

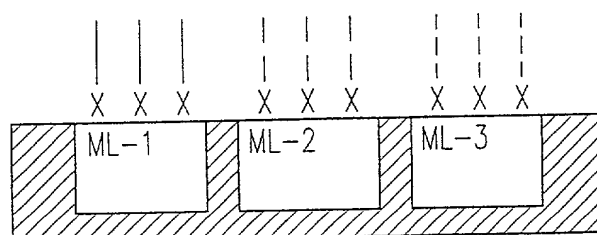
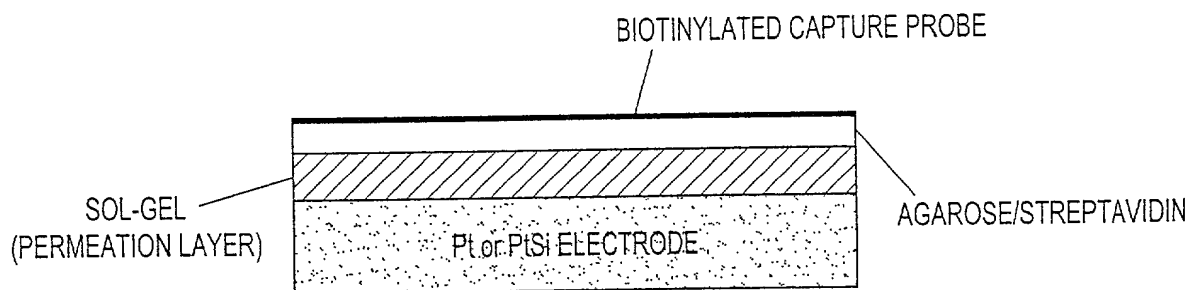


FIG. 5D

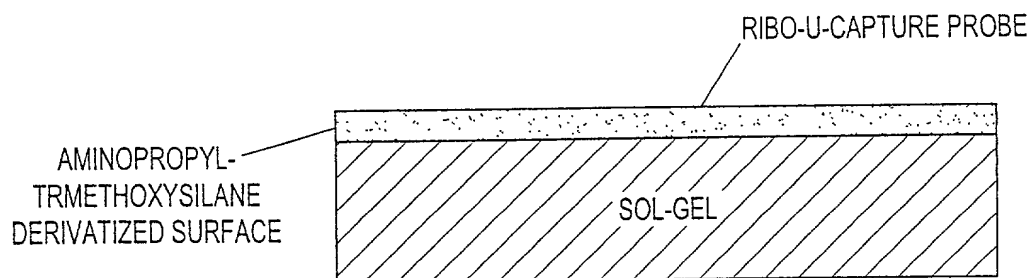
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### SOL-GEL PERMEATION LAYER WITH AGAROSE



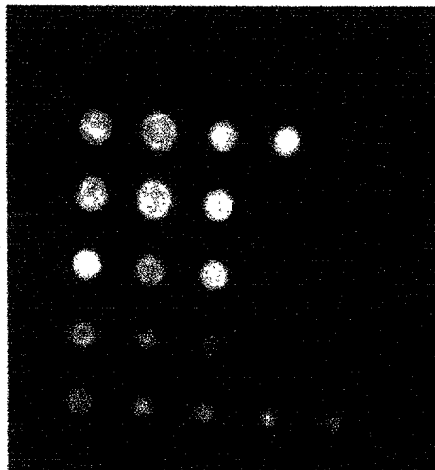
*FIG. 6*

### SOL-GEL PERMEATION LAYER WITH COVALENT ATTACHMENT OF CAPTURE PROBE



*FIG. 9*

Thin agarose/streptavidin on thick sol-gel  
Capture Load with 20 nM biotin-T12-BTR  
Sol-Gel sample a242e\_02\_04



## Reverse Dot Hybridization - ATA.5/RCA.5

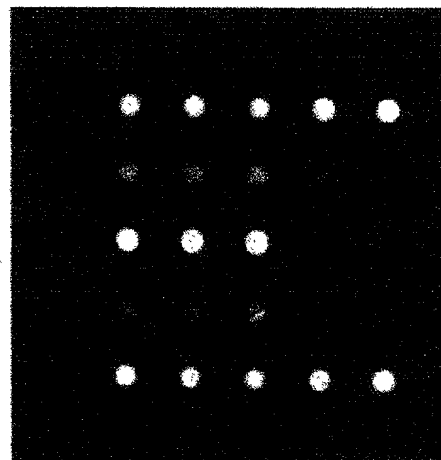


FIG. 8

[illegible]

### Results (MFI/sec)

2739.7	3223.46	7303.89	4833.02	4507.12
2736.55	2432.76	3889.88	4910.55	4361.04
2410.51	1812.5	6061.99	7301.65	5521.98
2360.5	500.14	536.48	566.61	6097.33
2191.22	466.62	502.07	517.45	512.36

**Capture Load - Columns 1, 3, 5 w/500 nM ATA.5, Columns 2,4 w/500 nM ATA.4 Loading at a pulsed 400 nA per pad program; # of points listed below**

**Target address - 400 nA pulse per pad, 0.1 sec ON, 0.2 sec OFF, 1000pts.  
20nM RCA.5-BTR**

### Results:

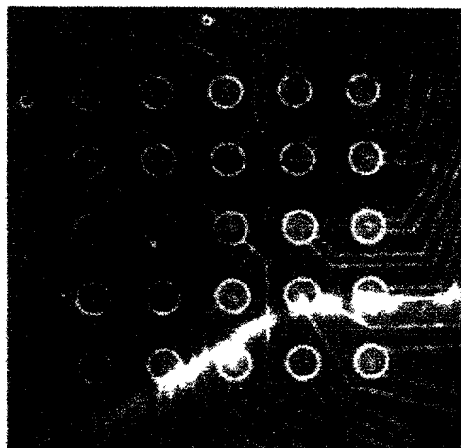
223.23	152.76	259.58	165.04	207.27
201.95	155.39	261.19	163.37	210.47
199.1	165.99	315.9	188.12	193.91
226.18	138.23	138.11	147.53	254.02
261.76	137.52	137.38	137.46	254.67

**Column 1 vs. Column 2**  
**Sp/Nsp = 1.41**

**Column 3.5 vs. Column 4**  
**Sp/NSp = 1.48**

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**Passive hybridization, 2% CTAB**  
- APS treated sol-gel  
- ACA5-ribo-U (1.71  $\mu$ M)  
PH 7.4  
Attachment time: 24 hrs.  
- RCA5-BTR (10  $\mu$ M)  
Incubation time: 15 min.  
10 secretory integration (C3):  
On pads: Average. MFI = 6760  
Off pads: Average. MFI = 3750



*FIG. 10*

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### Passive hybridization on APS-modified sol-gel surfaces (ATA5-RCA5 duplex)

Sol-Gel coatings are derived from 2% CTAB and are approximately 250 nm thick, except for the right most chip which was over 500 nm thick and synthesized from 3% CTAB.  
All values reported are for fluorescence averaged over the 25 pads

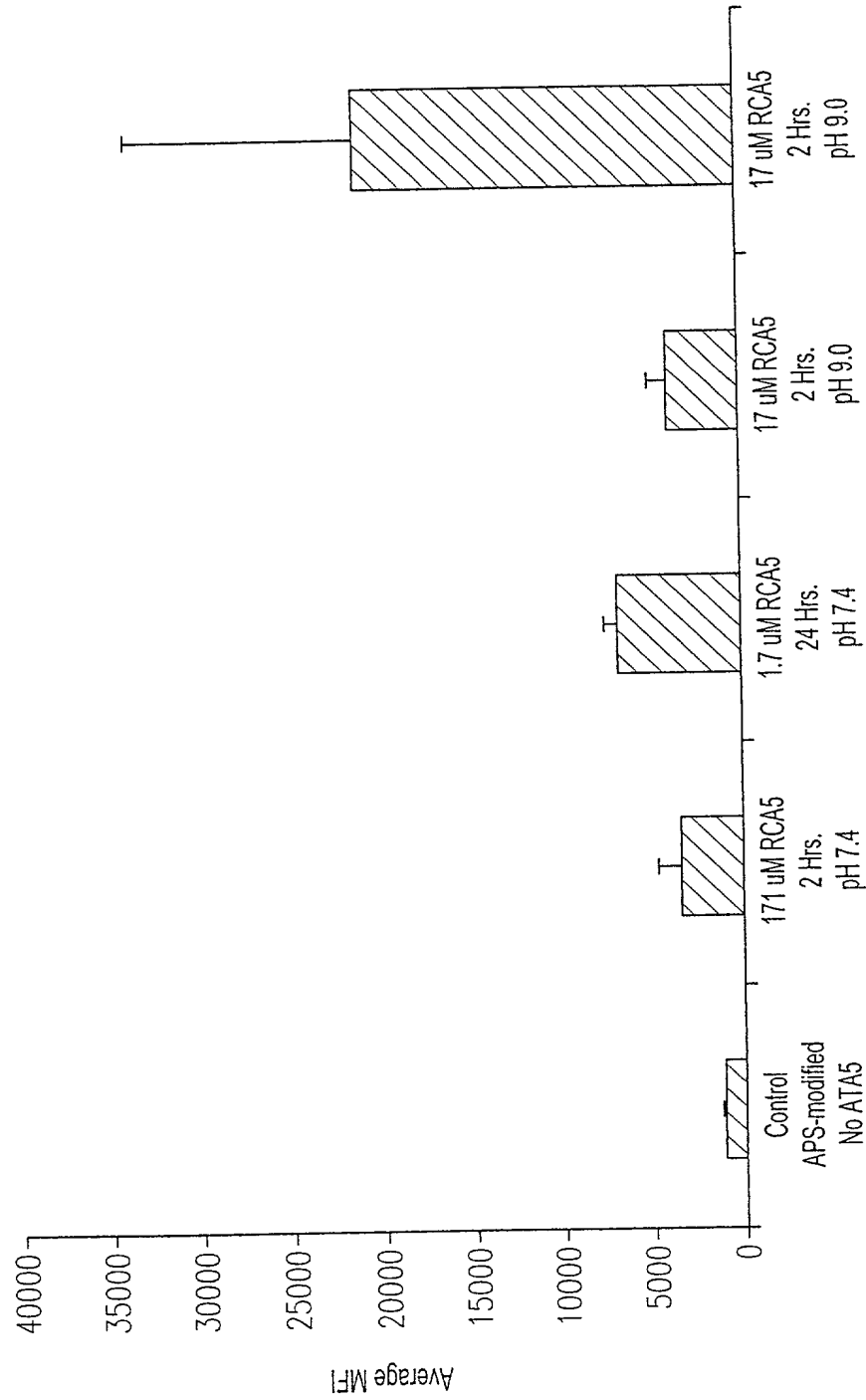


FIG. 11